



“We have a lot of home deliveries” A qualitative study on the impact of COVID-19 on access to and utilization of reproductive, maternal, newborn and child health care among refugee women in urban Eastleigh, Kenya

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ABSTRACT

Background: Little is known about how pregnant refugee women, and the frontline health care workers who serve them, are affected by the COVID-19 pandemic in terms of health, and health service access. Women refugees are classified as a vulnerable group with regard to pregnancy outcomes and access to maternal care, and may be disproportionately at risk for COVID-19 infection as they are likely to face unique barriers to information and access to reproductive health services during the pandemic. Few studies identify gaps that could inform potential interventions to improve service uptake for refugee women, particularly in the context of COVID-19. Yet, understanding how pregnant refugees are impacted in the context of the pandemic is critical to developing and implementing strategies and measures that can help in their care and the delivery of health services.

Aims: This study aimed to improve understanding of the impact of COVID-19 on women refugees' access to and utilisation of antenatal care, delivery and postnatal care in Eastleigh, Kenya.

Methods: The study was conducted in Eastleigh, a semi-urban centre in Nairobi. We conducted 25 in-depth interviews with facility and community health care staff ($n = 10$) and women attending antenatal ($n = 10$) and postnatal care services ($n = 5$) in October 2020. Data was analysed using NVIVO 12 software.

Findings: Our findings suggest that within the first eight months of COVID-19, preferences for home deliveries by refugee women increased and health care workers reported having observed reduced utilisation of services and delayed care. Fear, economic challenges and lack of migrant-inclusive health system policies were key factors influencing home deliveries and delayed and low uptake of facility-based care.

Conclusions: The findings highlight the need to mitigate and lower barriers that prevent refugee women from seeking care at health facilities. One approach includes the development of refugee-inclusive public health policies, particularly during a pandemic, and the need to tailor health care services for refugees at facilities and in the communities.

Key questions

What is already known?

- Research on refugee women access to and utilisation of antenatal care (ANC), delivery and post-natal care (PNC) are generally under-

Abbreviations: AKU, Aga Khan University; ANC, ante-natal care; CHV, community health volunteer; FP, family planning; HCW, health care workers; HIC, high-income country; HIV, Human Immunodeficiency Virus; IOM, International Organisation of Migration; LMIC, low- to middle-income country; MNCH, maternal, new-born and child health; NACOSTI, National Commission for Science, Technology and Innovation; PI, principal investigator; PNC, post-natal care; RMNCH, reproductive, maternal, new-born and child health; SSA, sub-Saharan Africa.

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represented in the global research. Compared to the host communities, refugee pregnant women have poor obstetric outcomes.

- Few studies identify gaps that could inform potential interventions to improve service uptake for refugee women, particularly in the context of COVID-19.

What are the new findings?

- In the context of COVID-19, preference for home deliveries increased, facility uptake of services became challenging and generally utilisation of facility care was postponed.
- The combination of fear, economics and the health system's lack of migrant-inclusive policies was a key factor in influencing home deliveries

What do the new findings imply?

- There is need to mitigate and lower barriers that prevent refugee women from seeking care at health facilities.
- There is need for national governments to initiate refugee tailored inclusive policies during pandemic

Introduction

Studies about how pregnant refugee women, and the frontline health care workers who serve them are affected during a pandemic are scant. In addition, studies on refugee women access to and utilisation of antenatal care (ANC), delivery and post-natal care (PNC) are generally underrepresented in the global research. This lack of vital information is particularly acute in low-resource settings in which 84 percent of the world's 20 million refugees live. Existing studies emanates from High Income Countries (HICs), and although these studies do not explore refugees in the context of pandemic, nevertheless, they show that, compared to the host communities, refugee pregnant women have poor obstetric outcomes, in part because they are less likely to receive the recommended World Health Organisation (WHO) eight ANC visits (Asif et al., 2015; Aspinall, 2010; Paz-Zulueta et al., 2015; Ny et al., 2007; Heaman et al., 2013; Almeida et al., 2013; de Jong et al., 2017; Merry et al., 2016; Essén et al., 2002; Heslehurst et al., 2018; Tunçalp et al., 2017).

Factors limiting access to ANC services among migrant communities include lack of transport, economic challenges, migrant's poor health literacy, language difficulties and social cultural factors (Heaman et al., 2013; Almeida et al., 2013; de Jong et al., 2017). Additionally, refugee women may struggle with their legal status, dire and overcrowded conditions with insufficient hygiene, sanitation or access to clean water. Global media have shown that low- to middle-income host countries often have weak health systems already overwhelmed by patients. The capacity of medical care staff is also low, in part due to extended periods of conflict in many of the countries of sub-Saharan Africa.

Although refugees everywhere are at risk for COVID-19 infection, this risk may be disproportionately heightened among pregnant refugees due to their limited access to health services. Women refugees are classified as a vulnerable group with regard to pregnancy outcomes and access to maternal care. They are likely to face unique barriers to information and access to reproductive health services during a pandemic (Asif et al., 2015; Aspinall, 2010; Heaman et al., 2013; Almeida et al., 2013; de Jong et al., 2017). Fear and stigmatization of the disease as well as being a refugee can cause anxiety leading to low uptake of maternal, new-born and child health (MNCH) services.

There has been a global concern that health care workers' (HCW) fear of contracting COVID-19 may negatively affect delivery of MNCH services (Pallangyo et al., 2020). A poor understanding of women's access and use of reproductive services among refugee populations may prevent effective service provision and utilization due to a lack of insights into refugees' sociocultural and ecological contexts. Given the multiple vulnerabilities and the increased risk of being disproportionately affected by COVID-19, it is crucial to take a rights-based approach in un-

derstanding and addressing COVID-19 among refugee population. The current research was undertaken to fill in these gaps by investigating the impact of COVID-19 on access to and use of antenatal care, delivery and post-natal care among refugee women in the urban neighbourhood of Eastleigh, Kenya.

Methods

Study design and context

The consolidated criteria for reporting qualitative research (COREQ) was used for comprehensive reporting in this study (Tong et al., 2007). We conducted qualitative in-depth interviews with facility health care workers and community health volunteers ($n = 10$) and ANC and PNC refugee clients ($n = 15$).

This study was conducted in Eastleigh, a semi-urban centre in Kamukunji sub-county of Nairobi county, Kenya. Eastleigh is home to refugees originating from Somalia, Ethiopia, Tanzania, Uganda, Eritrea and South Sudan. Most of the refugees are of Somali origin. The 2019 national census put refugees at 55% of the overall Kamukunji sub-county population (147,551 out of 268,276), of which 51% are men and 49% are women. Variations due to the country of origin are characterized by linguistic and cultural multiplicity. Languages commonly spoken include Somali, Amharic and Kiswahili. These dissimilarities may affect how women access and use available health care services.

The study was conducted in October 2020, seven months after the first case of COVID-19 was diagnosed in Kenya. Following the rise of COVID-19 cases in April, Eastleigh was locked down by the Kenyan government from May to July, so the community was not accessible and its inhabitants were not allowed to move to the other parts of the country. The lockdown was based on the area's dense population and a wide range of business hubs owned by the migrant population. For many years Eastleigh has been an economic hub within Nairobi and the horn of East Africa. A variety of businesses predominantly owned by Somali merchants operate in Eastleigh. Most of the products sold by merchants are of good quality with low prices, attracting people from all parts of the country. With the government's complete lockdown, Eastleigh saw the daily closure of all its businesses and some health facilities at 7 pm and monitoring of movement in and out of Eastleigh, which was difficult for undocumented migrants. The government lifted the lockdown in August 2020, and this study was conducted two months later.

In this study we aimed to better understand the impact of COVID-19 on access to and use of ANC, delivery and PNC services among refugee women in urban Eastleigh. Increased understanding will help us identify existing gaps and inform potential interventions that could improve uptake of services during the COVID-19 pandemic.

Study population and sampling methods

To reach a broader understanding of how COVID-19 impacted access to and utilisation of health care services, we conducted in-depth interviews with 15 patients (10 ANC and 5 PNC mothers) and 10 HCWs including facility health care workers ($N = 3$) and community health volunteers ($N = 7$). Facility health care workers were mainly clinical nurses working at the IOM wellness clinic and the CHVs were individuals working directly with the refugees in the communities.

Facility HCWs and community health volunteers who had worked with the refugees for at least one year were purposely sampled by the International Organisation of Migration (IOM) staff at the Eastleigh Wellness Clinic. The Wellness Clinic predominantly serves migrants from the horn of Africa providing ANC, PNC and outreach services through CHVs. Table 1 below gives a summary of our interviewees.

Table 1
A summary of study participants.

Categories	Total number of participants interviewed	Description of participants
Facility health care workers	3	Roles: Nurses working with maternal child health services (ANC, PNC and HIV patients). Mentors at the facility and in the communities. Facility record keeping.
Community health care workers	7	Roles: Facilitates ANC and PNC referrals from the community. Links patients from the community to the facility. Follows up on contact tracing for Tuberculosis patients. Conducts household disease surveillance. Promotes community hygiene.
Ante natal patients	10	Participants by nationalities. Somali's (N = 6) Tanzanian's (N = 2) Ugandan's (N = 1) Eritrea (N = 1)
Post-natal care patients	5	Somali origin with children between 2 and 18 months.
Total interviewed	25	

Interview process

Data collection was led by the study Principal Investigator (PI), a Kenyan social scientist with over 15 years' experience in research and supported by a qualitative research consultant and a research assistant.

Actual data collection began after securing institutional approval from the Aga Khan University – Kenya Institutional Ethics Review Committee and research licensing by the National Commission for Science, Technology and Innovation (NACOSTI/P/20/6507) on 11th September 2020. Further approval was sought from Nairobi Metropolitan Services (REF EOP/NMS/HS/7/VOL.1/RS/30) on 5th October 2020.

Data were collected in October using the local Kiswahili language with the refugee patients and English for the HCWs. Of the 15 women we interviewed, five could not speak English, requiring the need for an interpreter, who was a community health volunteer directly linked to the Wellness Clinic, and who translated the interviews.

All the study participants were provided with full disclosure and information regarding the purpose of the study, including the benefits and risks. They were also given the opportunity to ask questions before, during and after the in-depth interviews [IDIs]. The research assistant team was trained on the approved protocol, study processes and participant consenting before data collection began. Written consent was obtained before participation in the study. The IDIs were conducted in the clinical rooms, which were considered a convenient and confidential environment for the interviewees. The research assistant and the qualitative consultant collected the patients IDIs and the study PI conducted all the IDIs for all the HCWs.

The data gathered included participants' current knowledge, attitudes and perceptions concerning COVID-19, the impact of COVID-19 on access and utilisation of routine health care services and perceived barriers and enablers to accessing and utilising ANC and PNC services and community-based strategies, among other topics. This paper addresses only the impact of COVID-19 and its influences.

Data management and analysis

Recorded audio transcripts were labelled daily and transferred to the data transcriber via a secure password-protected link and to an Aga Khan University password-protected laptop and subsequently deleted once the transcribed copies were received from the transcriber. A verbatim transcription of the audio recorded interviews from Kiswahili to English was conducted by a trained and experienced transcriber conversant in both languages giving as much context as possible. All transcripts were anonymised by deleting references to names.

All the transcribed transcripts were checked by the PI and a research assistant who listened to the audio-recorded transcripts and compared them with the transcribed data. During this process, we found out that some data could be lost, particularly information obtained when a woman attended the interview with an infant baby who was crying. We were able to fill in with our reflective notes and with what we remembered from the interview. In addition, the PI listened to all transcripts of interviews in which patients attended with children to ensure that all information had been captured by the transcriber. All data were then uploaded in NVIVO 12, a qualitative data analysis software program.

The study followed thematic analysis used by Braun and Clark (Braun and Clarke, 2006). First, the PI and a research assistant (SO) each selected three transcripts from PNC, ANC and CHV interviews and independently read and coded them. Second, the PI and SO compared the codes they assigned and developed an initial coding framework. Third, JG reviewed some of the transcripts the PI and SO had coded and some new transcripts that were independently coded and developed a code book. Fourth, the PI, SO and JG met and compared the codebooks while merging key themes and minor themes. Lastly, SO and JG developed the final code book based on the thematic areas.

Findings

Our findings alluded that home deliveries increased during the pandemic, facility uptake of services became challenging and, in general, uptake of care was postponed. The combination of fear, economics and the health system's lack of migrant-inclusive policies was a key factor in influencing home deliveries.

Increase in Home Deliveries: Findings primarily from HCWs both at the facility and in the community suggest that, during the COVID-19 period pregnant refugee women were more likely to deliver in their homes with the help of traditional birth attendants. HCWs reported witnessing a home delivery, hearing about a home delivery and/or having been in contact with a mother who had delivered at home. Although most of the refugees of Somali origin may have been predisposed to cultural practices in which women are likely to deliver at home, this practice had not been witnessed in Kenya before the onset of COVID-19.

When asked to share their experience while working with refugee women and how COVID-19 had impacted them, HCWs working with women directly in the communities observed an increase in home deliveries:

Yes. We have a lot of home deliveries. In fact, we were discussing that yesterday, that home deliveries have gone up, and it has gone to an extent that even those mothers feared coming to the hospital and they did not even bring their babies for BCG [Bacillus Calmette–Guérin] vaccine.

IDI-Community Health Volunteer-3

Moderator: During the lockdown, could you tell me how the care for women was affected, those who wanted to deliver and those that were pregnant or had children?

Respondent: They were affected because some of them [were] delivering in their households, which is not advisable. They were to go to the facility.

IDI-Community Health Volunteer-5

Moderator: You have said you saw a refugee deliver by roadside. Was it common to have refugees deliver by themselves and alongside the roads?

Respondent: These problems became worse when Corona started, especially for the refugees, they went through a lot of difficulty.

IDI-Community Health Volunteer-1

One of the mothers who delivered at home had not attended any antenatal care services, and it seems most of the maternity hospitals within their reach were considered too far away. One community health volunteer stated:

Yes, there are some giving birth at home because they do not want to go to the hospital. The nearest public hospital around this area is the one at Fourth and Pumwani, and they seem to see that there is a big distance. ... There was a mother who gave birth in her house and she had not attended antenatal clinic and she was assisted to deliver. The issues of home delivery that we used to fight before have actually come back. It is not one case, there are many cases.

IDI-Community Health Volunteer-7

In the following quote, an HCW reveals the challenges of delivering at home. Delivering at home may result in difficulty getting a child's birth certificate.

Respondent: Yes, I got some mothers post-natally [post-natal] that wanted me to guide them on how to get birth certificates. You know when you deliver at home it gets hard to get a notification. I got quite a number whom I had to guide on the process of getting birth certificates. They had to report to the chief.

Moderator: That is a long process.

Respondent: You know a sub-chief had to be paid. Everything is money here in Kenya.

IDI-Facility Health Worker – 1

Reduced Facility Access to RMNCH Services: Overall findings revealed limited access to facility services, and staff reported low patient numbers at the facility in part due to fear of contracting COVID-19.

During the COVID-19 period, even the numbers have gone down for ANC mothers, because if you were getting ten per day, you now get two or three.

IDI-Facility Health Care Worker 2

Before the outbreak of Corona, they were coming to the hospital in large numbers. They used to come, many of them, but now the numbers have reduced drastically because they fear coming to the facility. **IDI-Community Health Volunteer – 1**

Some patients explained that they never went to the clinic because the staff were not present during the COVID-19 pandemic.

Moderator: You've said, during the COVID-19, you never visited any clinic?

Respondent: Yes. There was nobody to attend to you.

IDI-ante natal care patient - 1

Delayed Facility Utilization of RMNCH services: Facility HCWs reported that mothers started their ANC clinics late. This has some negative implications for those mothers, particularly if they were HIV positive. For example, mothers who started ANC six to seven months late ended up missing vital vaccinations

A mother would start ANC clinic at her third trimester, and this time she has started very late, maybe she is at six to seven months pregnant, and she would have missed important vaccinations such TT [Tetanus Toxoid] because she started her clinics late. We have the biggest problem when a mother starts her clinics late and she is HIV [human immunodeficiency virus] positive, unlike the one who is HIV negative.

IDI-Facility Health Care Worker-2

So they would not come out unless there was someone with a very serious concern they wanted to come to the clinic, like third-trimester ANC mothers.

For them, they could come in. But for first trimester, second trimester, sometimes for them they delayed coming. ... Yes. Our census was down because they were not able to make it to come because of the restrictions [government lockdown working hours]

IDI-Facility Health Care Worker-3

Delayed care did not happen only with pregnant mothers. Women who had small babies were also reported to bring their children for vaccination very late as explained in the following quotes

Moderator: You've mentioned a very important point—how COVID-19 affected post-natal care women and their children. Tell me a little bit more. Exactly what happened?

Respondent: We were reaching out to most of them. They had children but you'll find one has not brought her child for the Penta III [pentavalent vaccine]. You know, COVID-19 started in March, so at that time you'll have a woman deliver and she couldn't bring her child to the clinic, so she has missed Penta 3, again she missed Penta II and Penta I, then she will miss to take the child for vitamin A at six months.

IDI-Facility Health Care Worker-1

Just near our facility here, in the Eleventh Street where we are, we came across a mother who had her child miss all the immunization for nine months, ..., with the reasons being that the husband did not allow that to happen.

IDI-Community Health Volunteer – 1

Overall, low utilisation of services and delayed care resulted from the disruption of services during the COVID-19 government lockdown. In the following quote, a facility health care worker explains the additional financial burden the lockdown had on the health systems operations.

Actually, it was really disrupted because initially there was a lockdown in Eastleigh, so patients coming for the ARVs [antiretroviral therapy] could not access the facility. They had to pay courier services to take drugs to clients. The schedule of monitoring mothers with HIV after every six months was also disrupted. So, we had to give long appointments not as planned, babies we had to postpone the PCR [Polymerase chain reaction] taking, for the mothers we had to postpone the VL [Viral load] taking, that is how it was.

IDI-Facility Health Care Worker-3

Influences to increased home deliveries, low utilisation and access to RMNCH

Fear and proposed prevention measures: The interplay between fear of contracting COVID-19 and proposed prevention measures had a direct impact on increased home deliveries, low utilisation and access to RMNCH. Study findings revealed that low attendance or/and delayed access to maternal new child health (MNCH) services may have been caused in part by fear of contracting COVID-19 at the facilities, as observed in the following quotes from ante natal patients.

I used to fear to go to the hospital because when Corona started, children were not taken to the hospital, the child was staying in the house. I was scared of going to the hospital because of Corona.

IDI-ante natal care patient - 3

Moderator: How were you going about it?

Respondent: I was staying indoors because I wouldn't visit in crowded places. You would not go anywhere because you would easily get the virus if you came across someone with the disease. Even my husband wouldn't allow us. He even wanted to lock us inside the house....

IDI-ante natal care patient - 1

Narratives from community health volunteers and facility health care workers corroborated with patients reports. Besides fear, facility health workers reported that lack of clear information as to who was going to carter for the COVID-19 cost at the facility may have discouraged some patients from attending facility carer.

They were saying [refugees] that they cannot access medical because their worry was they might come and get Corona as they come to the facilities because the government has said there is no more crowding. So, their fear was, if they go to the facility, they would contract Corona. And they so it is better to stay at home and not come to the clinics.

IDI-Community Health Volunteer-5

There was a misconception about this COVID-19 among the Muslim community. Even when you tell them that you have services, that you need to take the patients for check-up in the hospital, they had some fears that once they go to the hospital they will have to be tested for COVID-19. And you remember, at first the information was not so clear, if you go for a test and you test positive, whether you were to take care for the cost or the government caters for the costs. That was one of the factors that made most of our patients not to go for medical services and check-ups.

IDI-Facility Health Care Worker-1

Fear of being isolated after testing positive and the financial implications of being quarantined were reported to have contributed to home deliveries and low access to MNCH services:

Respondent: When they come for the first visit, they do not come for the second or third visit. Actually they disappear.

Moderator: Why would expectant women disappear?

Respondent: They said if they come to our facility, they will be tested for Corona and that they will be taken to an isolation centre in case they are told they are infected, where they will be forced to pay for everything, including food. Even during delivery, they deliver at home, and you will have to follow them up to their places. They really fear coming to the facility.

IDI-Community Health Volunteer –1

Government lockdown measures starting at 7 p.m. meant that women in labour beyond this time could not access any facility care, which suggested to some that they had to give birth at home.

When this case of home deliveries started coming up, it was during that lockdown because the lockdown was from seven, [if] the mother starts to go to labour at night, what will she do? She will just deliver. So personally, I didn't report anywhere because I didn't have any solution and if at all I could have reported, they could have gone for that mother who is assisting mothers deliver at home.

IDI-Community Health Volunteer –7

Poverty and lack of affordable delivery services: When asked why many deliveries take place at home, reports largely from the community health volunteers and facility health workers alluded to a lack of affordable hospitals offering maternity services. Government maternity services were unavailable and the few private hospitals that were in operation were expensive.

Moderator: I have been told by other interviewees that there were home deliveries. Did you also experience home deliveries while working in the communities?

Respondent: Yes, because they do not have money and cannot afford to go to private hospitals as they are very expensive. ... Some of the refugee women who were expectant would even deliver alongside the road because they did not have money. They went through difficulties.

IDI-Community Health Volunteer –1

During COVID-19, there were no maternity services in government facilities, so they opted to seek the services at the private facilities and, due [to] the demand and supply. Private [facilities] received a high number of mothers who were seeking their services; therefore, they hiked the fee that most of the mothers could not afford to pay. Imagine, like in another hospital around here, that normal delivery fee is fifty thousand shillings [equivalent to \$ 500].

IDI-Facility Health Worker-1

Moderator: What do you think didn't work well for the clients during COVID-19?

Respondent: I can say like everything didn't work well because they were required to pay money which they didn't have, the service delivery points were minimized, so it was not okay for them in each and every aspect. There were challenges.

IDI-Facility Health Care Worker-3

Staff negative attitudes and discriminatory policies: Health care worker's poor attitudes towards refugee women during delivery were reported by the community health care workers. Health care workers did not want to accord help to refugee mothers who showed up in the facility after delivering in their homes, thus increasing their vulnerabilities. In addition, existing government maternity policies such as *Linda mama*

mtoto, a public health program that ensures that all pregnant women and infants have access to affordable maternity care did not favour refugees. As illustrated in the following quotes, refugees cannot access this card, which is a gateway to being admitted to local public maternity hospitals. Hospitals find it difficult financially to admit refugees who have this card because the government does not refund them for services to refugees

They were working [HCWs] with a lot of attitudes; especially if you refer a mother who has delivered in the house, getting help was difficult. Mothers really suffered during that period and are suffering up to now because, number one, we have the Linda mama program through the NHIF [National Health Insurance Fund] card that was introduced, [but] apparently the migrants are not benefiting from this card. They cannot be admitted at Pumwani [maternity hospital] if they don't have that card, because they [HCWs] are saying this money is a waste, the government cannot refund [refund the hospital fees], so they tend not to admit any migrant because they know they will not get any refund. It is happening even now.

IDI-Community Health Volunteer-7

Moderator: So, the migrants don't qualify for the Linda mama mtoto?

Respondent: They qualify, but the program through NHIF [National Health Insurance Fund] refunds for deliveries for hosts [Kenyans] only, but for the migrants there is no refund. So, the facility normally says that they are doing a useless job. That is the what they say. Just last week, we had like four migrants from Uganda. They delivered while I was there present, but they were saying that they are doing a useless job.

IDI-Community Health Volunteer –7

Government help for pregnant mothers is targeted for the host communities, not for migrants, and some HCWs were often faced with ethical dilemmas of ensuring that vulnerable refugees received help. As shown in the following narrative, there was no help designated for refugees from the local government.

They are the people who suffered silently, and nobody was there to take care of their needs. Then another surprising thing that happened during that period, there was help that came from the government that was targeting pregnant women and children. The most unfortunate this is when I called and said I have many migrants, I was told no, this help is not for migrants, it is for Kenyans. What do you do at such a situation? ... We kept on asking ... what will happen to the migrants in Eastleigh, because if the focus is on the host and the migrants are the majority, and looking at the vulnerability status they are the most vulnerable. What will happen to them?

IDI-Community Health Volunteer –7

Discussion

In the current study, we set out to investigate how COVID-19 has impacted refugee women access to and utilisation of RMNCH services in urban Eastleigh, Nairobi. To this end, we interviewed HCWs in the community and at the IOM facility who were working directly with a wide range of refugees of different nationalities. We also interviewed pregnant refugees and those receiving post-natal services.

Our findings show that, despite national health policy that encourages facility delivery under the care of skilled birth attendants, including affordable care, some refugee women still gave birth at home. Our findings also show that, home deliveries may have been perpetuated and are likely to increase again by public health strategies and policies that discriminate against migrant women and their infants (e.g., *Linda mama mtoto*). These findings identify gaps in existing national policies and call for urgent consideration for refugee women who have no access to facility-based skilled care during a pandemic. Amplified by poverty and the lack of sanitary equipment, home deliveries may predispose refugee women and their babies to contracting COVID-19 and other infections.

Study findings shows that there was reduced uptake of ANC services during the pandemic, and women were unlikely to attend eight visits as recommended by the WHO in part due to fear of contracting COVID-19 and the government lockdown that saw the disruption of services. Antenatal service is key during pregnancy as it can detect adverse intrauter-

ine growth, eclampsia and congenital malformations and chromosomal abnormalities. During a pandemic, considerations must be given to continued access to MNCH health services so that there is continuity of care. This could be achieved by using CHVs to identify ANC and PNC women and reach them with tailored services.

Sensitization about the plight of pregnant refugee women and their children is needed at the community, among HCWs and at the government level to shift behaviours and practices that discriminate and marginalise refugee women. Refugees must be included in national health system policies as participants in the health care system. The government should revisit *Linda mama mtoto* policy and sensitize HCWs to allow refugee patients to receive equal treatment. Sensitization and HCW information campaign could ensure that host communities are aware of policy changes and that refugees are safe to access maternity care services without being discriminated against. Health care providers should be made aware about the legal status and rights of refugees and their infants as it relates to both national and international laws. These could be achieved by developing tailored materials for both refugees and health care providers on the rights of the refugee mothers and their infants.

Overall, these findings show that refugees delayed uptake of RMNCH care, and facilities reported low attendance. This was often a result of refugees' fear of contracting COVID-19 and poverty, which meant that they could not afford masks or the cost of private maternity services. Measures are needed to protect pregnant refugees and those who have children by ensuring that they have masks so they can visit facilities without fear, and refugee-sensitive delivery services should be tailored to their needs.

As one of the few studies to look at this understudied population in the Kenyan context, this study addresses an important gap in knowledge about how, and why, pregnant and post-natal refugee women are affected in the context of the pandemic. In-depth interviews with both HCWs and patients were a rich source of information exposing some of the policies that may increase the vulnerabilities of refugee women. The study findings have the potential to inform further studies in the region using a wide range of methods.

This study encountered various limitations, as most of the useful data gathered came from HCWs. A substantial number of the female clients recruited for this study engaged limitedly in the conversations due to language barriers. Because some of the patients did not speak Swahili, interpreters were used in a few interviews, which could suggest that some data may have been lost. This could also have been due to fear of being found out if they are undocumented or lack of trust on how their data could be used. During interviews, some PNC mothers showed up with children and extended families, and they often asked to be excused to breast feed their babies, returning after 15 min to be interviewed. This may have had a bearing on the data collected. Lastly, during the interviews, a physical distance of two meters was maintained between researchers and study participants, and because all interviewees and interviewers wore face masks throughout the interviews, it was difficult to gauge facial expressions.

This study proposes the following methodological recommendations. First, the methodology used in this study suggests that researchers studying refugees or migrant populations who speak foreign languages should reconsider training individuals in the refugee communities to conduct research and as well as use refugees interpreters to transcribe—as it is likely that during transcription they could identify gaps. Second, refugees of Muslim origin may have large families with challenging child care needs, as shown in this research and other studies, so researchers should consider having child care in place when interviewing refugees of reproductive age. Lastly, research about refugees should be conducted in a language in which they are fluent. If interpreters are used, the respondents must feel comfortable with them.

Conclusions

Findings from this study show the need for refugee-inclusive public health policies, particularly during a pandemic, and the need to tailor health care services for refugees at facilities and in communities. The findings also make clear the urgent need to mitigate and lower barriers that prevent refugee women from seeking care at health facilities. Lastly there is need for methodological design tailored towards refugees' unique needs.

Declaration statements

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study received ethical clearance from both the Institutional Review Board of Aga Khan University, Kenya, and the National Commission for Science, Technology and Innovation (NACOSTI/P/20/6507) on 11th September 2020. Further approval was sought from Nairobi Metropolitan Services (REF EOP/NMS/HS/7/VOL.1/RS/30) on 5th October 2020.

CONSENT FOR PUBLICATION

All authors have provided a formal written Consent to Publish this work

AVAILABILITY OF DATA AND MATERIAL

Researchers who meet the criteria for access to confidential data can contact the following individuals at the Aga Khan University: adelade.lusambili@aku.edu and research.support@aku.edu

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Authors' contributions

AL: Conceptualization, data collection, data analysis, supervision, visualization, writing and validation

MM: Conceptualization, coordination and infrastructural support for actual study implementation

FA: Conceptualization, coordination and implementation

AA: Conceptualization, coordination and implementation

SO: Data collection, data analysis and manuscript review

JG: Data analysis, data visualization and validation

RM: Logistics and manuscript review

SL: Conceptualization, coordination, writing, visualization, validation and final manuscript review

Declaration of Competing Interest

All authors have declared no competing interest

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